

**WE CLAIM:**

- 1           1.     A method for proactively monitoring a healthcare information  
2     system, the method comprising:  
  
3           monitoring one or more performance parameters of the healthcare  
4     information system by recording the values of the parameters by one of a plurality  
5     of counters;  
  
6           comparing the value of the counters to thresholds; and  
  
7           notifying a designated representative if the value of one of the plurality of  
8     counters exceeds one of the thresholds.
- 1           2.     The method of claim 1, wherein the monitoring comprises polling  
2     the values of the parameters at a predetermined interval.
- 1           3.     The method of claim 1, wherein said performance parameters  
2     comprise system performance parameters describing operational characteristics of  
3     the healthcare information system and business performance parameters describing  
4     operational characteristics of data processed by the healthcare information system.
- 1           4.     The method of claim 3, wherein the system performance parameters  
2     are selected from the group consisting of free space on disk drives, status of power  
3     supply, status of network card, status of print queues, status of database backups,  
4     transaction logs of the database, number of outstanding database locks, status of

5 SQL Server, status of SQL Server Agent, status of Microsoft Message Queue  
6 (MSMQ), status of Internet Information Server (IIS), network transaction  
7 throughput, CPU utilization, average response time of the user interface, repeated  
8 attempts to gain access to the system, and repeated attempts to gain unauthorized  
9 access to privileged data.

1 5. The method of claim 3, wherein the business performance  
2 parameters are selected from the group consisting of number of waiting patients,  
3 size of order entry queue, overdue diagnostic reports, and count of unresolved  
4 billing exceptions.

1 6. The method of claim 1, wherein the designated representative is an  
2 automated system.

1 7. The method of claim 1, wherein the designated representative is a  
2 user of the healthcare information system.

1 8. The method of claim 1, wherein the designated representative is a  
2 customer support representative of the healthcare information system.

1 9. The method of claim 1, wherein the notifying comprises routing a  
2 notification to a designated representative responsible for the healthcare  
3 information systems.

1           10.    The method of claim 1, wherein the notifying comprises routing a  
2   notification to a designated representative responsible for the counter that  
3   exceeded the threshold.

1           11.    The method of claim 1, wherein the threshold is defined by a user of  
2   the healthcare information system.

1           12.    The method of claim 1, wherein the threshold is defined by a  
2   customer support system of the healthcare information system.

1           13.    The method of claim 1, further comprising:  
  
2           receiving from the designated representative an acknowledgement of receipt  
3   of the notification and an instruction of an action to be performed on the healthcare  
4   information system; and  
  
5           performing the action to bring the value of the one of the plurality of  
6   counters back within the predetermined threshold.

1           14.    The method of claim 1, wherein the notifying further comprises  
2   escalating the notification to a designated representative of a higher tier, when no  
3   acknowledgement is received after a predetermined period.

1           15.    The method of claim 1, wherein the monitoring further comprises  
2   implementing one or more counter instances, capable of monitoring and recording

3 specific aspects of a counter of the plurality, wherein the counter is a generic  
4 counter object.

1 16. The method of claim 1, wherein the comparing comprises  
2 transforming one of the performance parameters to a numeral, the numeral capable  
3 of being recorded by a counter.

1 17. The method of claim 1, further comprising displaying a user  
2 interface illustrating relationships between the counters and the thresholds.

1 18. A system for proactively monitoring a healthcare information  
2 system, the system comprising:

3 a plurality of counters, each of which capable of monitoring one of a  
4 multiplicity of performance parameters by recording the values of the one  
5 parameter; and

6 one or more notification agents, the agent capable of notifying a designated  
7 representative when the value of one of said plurality of counters exceeds a  
8 threshold.

1 19. The system of claim 18, further comprising an operator, capable of  
2 performing an action, in response to an instruction from the designated  
3 representation that the action be performed on the healthcare information system,  
4 to bring the value of the one of the plurality of counters back within the threshold.

1           20.    The system of claim 19, wherein the operator is a human, wherein  
2   the action is performed manually.

1           21.    The system of claim 20, wherein the operator is an automated  
2   system, wherein the action is performed automatically.

1           22.    The system of claim 18, wherein the plurality of counters poll the  
2   values of the performance parameters at a predetermined interval.

1           23.    The system of claim 18, wherein the performance parameters  
2   comprise system performance parameters describing operational characteristics of  
3   the healthcare information system and business performance parameters describing  
4   operational characteristics of data processed by the healthcare information system.

1           24.    The system of claim 23, wherein the system performance parameters  
2   are selected from the group consisting of free space on disk drives, status of power  
3   supply, status of network card, status of print queues, status of database backups,  
4   transaction logs of the database, number of outstanding database locks, status of  
5   SQL Server, status of SQL Server Agent, status of Microsoft Message Queue  
6   (MSMQ), status of Internet Information Server (IIS), network transaction  
7   throughput, CPU utilization, average response time of the user interface, repeated  
8   attempts to gain access to the system, and repeated attempts to gain unauthorized  
9   access to privileged data.

1           25.    The system of claim 23, wherein the business performance  
2 parameters are selected from the group consisting of number of waiting patients,  
3 size of order entry queue, overdue diagnostic reports, and count of unresolved  
4 billing exceptions.

1           26.    The system of claim 18, wherein the designated representative is a  
2 human or an automated system.

1           27.    The system of claim 18, wherein the designated representative is a  
2 user of the healthcare information system.

1           28.    The system of claim 18, wherein the designated representative is a  
2 customer support representative of the healthcare information system.

1           29.    The system of claim 18, wherein the notification agent is capable of  
2 routing a notification to a designated representative responsible for the counter of  
3 the plurality that exceeded the threshold.

1           30.    The system of claim 18, wherein the notification agent is capable of  
2 routing a notification to a designated representative responsible for the healthcare  
3 information systems.

1           31.    The system of claim 18, wherein the threshold is defined by a user of  
2 the healthcare information system.

1           32.    The system of claim 18, wherein the threshold is defined by a  
2 customer support system of the healthcare information system.

1           33.    The system of claim 18, wherein the one or more notification agents  
2 are further capable of escalating the notification to a designated representative of a  
3 higher tier, when no acknowledgement is received after a predetermined period.

1           34.    The system of claim 18, wherein at least one of the plurality of  
2 counters is a generic counter object, wherein the generic counter object is capable  
3 of implementing one or more counter instances to monitor specific aspects of the  
4 corresponding performance parameters.

1           35.    The system of claim 18, wherein at least one of the plurality of  
2 counters is capable of transforming one of the performance parameters to a  
3 numeral, the numeral capable of being recorded by a counter.

1           36.    The system of claim 18, further comprising a first user interface,  
2 capable of illustrating relationships between the counters and the thresholds.

1           37.    The system of claim 36, further comprising a second user interface,  
2 capable of illustrating relationships between the counters and the thresholds,  
3 wherein the first user interface is connected to a user of the healthcare information  
4 system, wherein the second user interface is connected to a customer support  
5 system of the healthcare information system.

1           39.    A computer program product implementing the system of claim 18.

1           40.    A computer readable medium having recorded thereon information  
2    on (i) the plurality of counters, (ii) the thresholds, and (iii) the designated  
3    representatives, of the system of claim 18.